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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,160	12/23/1999	SATOSHI KOKUBO	35.C14155	7094

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EXAMINER
MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
1762	

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14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/471,160	Applicant(s) KOKUBO ET AL.
	Examiner Wesley D Markham	Art Unit 1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2003 and 24 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4 and 6-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 6-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 2/24/2003 as paper #12 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/471,160 is acceptable and a CPA has been established. An action on the CPA follows.

Response to Amendment

2. Acknowledgement is made of applicant's amendment B, filed as paper #9 on 1/29/2003 (with a certificate of mailing dated 1/22/2003), in which Claims 1, 2, and 4 were amended and Claims 6 – 8 were added. Claims 1, 2, 4, and 6 – 8 are currently pending in the instant application, and an Office Action on the merits follows.

Drawings

3. The four (4) sheets of formal drawings filed by the applicant on 12/23/1999 are accepted by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The rejection of Claims 1, 2, and 4 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraphs 8 – 9 of the previous Office Action (i.e., the final Office Action, paper #8, mailed on 10/22/2002), is withdrawn in light of applicant's amendment B in which the language of Claim 1 (from which Claims 2 and 4 depend) was amended to recite that the rinsing liquid is supplied from a rinsing liquid supply path as opposed to a coating liquid supply path as previously recited in the claims.

6. In addition, please note that the rejections of Claims 1, 2, and 4 under 35 U.S.C. 102 and/or 35 U.S.C. 103(a) based on Asahi Glass Co. Ltd. (JP 10-282329 A), Maneke et al. (USPN 4,704,308), Henninger (USPN 4,560,584), and Poag et al. (USPN 5,958,517), alone or in combination, set forth in paragraphs 10 – 19 of the previous Office Action, are withdrawn in light of applicant's amendment B and corresponding remarks. Specifically, none of Asahi Glass Co. Ltd. (JP 10-282329 A), Maneke et al. (USPN 4,704,308), Henninger (USPN 4,560,584), and Poag et al. (USPN 5,958,517) teach that the cleaning step is performed on a slit in a coating head as required by amended independent Claims 1 and 8.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 7, and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by the applicant's admitted prior art (AAPA).

9. Regarding independent Claims 1 and 8, the AAPA teaches a rinsing / coating method of ejecting a coating liquid (i.e., from a coating liquid tank "11") over the surface of a member to be coated "7" from a slit "54" formed at a coating head "5" and thus forming a coated layer "6" thereon, the method comprising the steps of rinsing an inside of the slit "54" by stopping a supply of the coating liquid to the coating head after ejecting the coating liquid, and supplying a rinsing liquid from a rinsing liquid supply path extending to the coating head (Figure 4 and page 4, lines 6 – 24 of the applicant's specification). Specifically, the AAPA teaches that, in a prior art slit coating device, when the stop time elongates (i.e., when the coating liquid is stopped from being supplied to the coating head), a rinsing liquid is flowed from a rinsing liquid supply circuit to rinse the tip area of the coating head and the slit area "54", which is equivalent to the inside of the slit (see Figure 4). In the AAPA, the rinsing liquid and the coating liquid flow to the slit / coating head through the same circuit / path (page 4, lines 14 – 20 of the applicant's specification). As such, the rinsing liquid supply path and the coating liquid supply path of the AAPA are essentially the same path, and the examiner has reasonably interpreted the

aforementioned path to be the "rinsing liquid supply path" extending to the coating head required by independent Claims 1 and 8. Regarding Claim 7 (which depends from Claim 1), the AAPA also teaches that the rinsing liquid is a solvent of the coating liquid (page 4, lines 10 – 11 of the applicant's specification).

10. Claims 1, 2, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Potjer et al. (USPN 5,851,566).

11. Regarding independent Claims 1 and 8, Potjer et al. teaches a rinsing / coating method of ejecting a coating liquid over the surface of a member to be coated (e.g., a moving sheet or web (Col.1, lines 4 – 6)) from an elongated, narrow coating orifice / slot (i.e., a slit (Figures 3, 4, and 9, Abstract, and Col.4, lines 31 – 33)) formed at an applicator die "50" (i.e., a coating head (Figures 3, 4, and 9, and Col.4, lines 27 – 35)) and thus forming a coated layer thereon, the method comprising the steps of rinsing an inside of the slit (i.e., manifolds "72" and/or "74") by stopping a supply of the coating liquid to the coating head after ejecting the coating liquid, and supplying a rinsing liquid from a rinsing liquid supply path extending to the coating head (Figure 9, Col.7, lines 35 – 67, and Col.8, lines 1 – 17). Regarding Claim 2 (which depends from Claim 1), Potjer et al. also teaches supplying the rinsing liquid trace by trace or intermittently to the coating head. Specifically, Potjer et al. teaches starting and then stopping a flow of cleaning solution to the coating head in order to clean manifold "72" (i.e., the manifold associated with the first coating liquid), and then repeating these steps in order to clean manifold "74" (i.e., the manifold

associated with the second coating liquid) once one desires to switch back to using the first coating liquid (Col.8, lines 4 – 17). This sequence of starting / stopping / starting, etc. the flow of cleaning solution is equivalent to supplying the cleaning (i.e., rinsing) liquid intermittently to the coating head as required by Claim 2.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA).

15. The AAPA teaches all the limitations of Claim 2 as set forth above in paragraph 9, except for a method wherein the rinsing liquid is supplied trace by trace or intermittently to the coating head. However, the AAPA does teach that the rinsing liquid is flowed when the "stop time" (i.e., the time during which the coating liquid is not supplied) elongates. The coating liquid is replaced by this rinsing liquid, and then the rinsing liquid is replaced by the coating liquid (page 4, lines 9 – 20 of the applicant's specification). In other words, the rinsing liquid used in the AAPA does not flow *in perpetuity*. Therefore, it would have been obvious to one of ordinary skill in the art to supply the rinsing liquid to the coating head during every period of elongated stop time, or in other words, between the time periods during which the slit coater is being used for coating, with the reasonable expectation of successfully and advantageously preventing the coating liquid from being solidified at the tip of the coating head after each and every time the slit coater is utilized for coating. These repeated rinsing liquid supplying steps are equivalent to supplying the rinsing liquid intermittently as required by Claim 2.

16. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Poag et al. (USPN 5,958,517).

17. The AAPA teaches all the limitations of Claims 2 and 6 as set forth above in paragraph 9, except for a method wherein the rinsing liquid is supplied trace by trace or intermittently to the coating head (Claim 2), or more specifically, a method wherein when the supply of the coating liquid is stopped, the rinsing liquid is

supplied to the coating head periodically (Claim 6). The AAPA is silent as to whether the rinsing liquid is supplied periodically / intermittently or continuously during the time period(s) in which the supply of coating liquid is stopped. However, it is the purpose of the rinsing liquid of the AAPA to prevent the coating liquid from being solidified at the tip / slit of the coating head (page 4, lines 6 – 12 of the applicant's specification). Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to prevent the coating liquid from contaminating the orifice (i.e., an orifice cleaning process analogous to that taught by the AAPA) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to pulse the flow of cleaning fluid by opening and closing the cleaning fluid valve (i.e., to periodically supply the rinsing liquid) to provide cleaning agitation and facilitate the cleaning of surfaces (Col.6, lines 51 – 54). Therefore, it would have been obvious to one of ordinary skill in the art to periodically supply (i.e., pulse) the rinsing liquid of the AAPA to the coating head when the supply of coating liquid is stopped with the reasonable expectation of successfully and advantageously improving the cleaning efficiency of the rinsing process.

18. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al. (USPN 5,817,441) in view of the applicant's admitted prior art (AAPA).

19. Regarding Claim 4, Iwata et al. teaches a method of manufacturing a color filter substrate, the method comprising the steps of coating a photosensitive resinous composition over a substrate by a die coating method, obtaining a black matrix

pattern by forming a pattern on the photosensitive resinous composition, and applying a coloring ink so as to fill in the black matrix pattern gap (Abstract, Figures 1A – 1E, Col.5, lines 25 – 67, and Col.6, lines 1 – 9). Iwata et al. does not teach the specifics of the die coating method used to coat the photosensitive resinous composition over a substrate (i.e., that the coating is performed using the method of Claim 1). However, the AAPA teaches all the specifics of the slit (i.e., die) coating method recited by the applicant in Claim 1 (see paragraph 9 above). The AAPA also teaches that such a slit coating method is advantageously used to deposit a photosensitive resin in the production of a color filter (i.e., the application taught by Iwata et al.) (page 3, lines 11 – 18 of the applicant's specification). It would have been obvious to one of ordinary skill in the art to utilize the slit coating / rinsing method as claimed by the applicant in Claim 1 and taught by the AAPA to deposit the photosensitive resinous composition of Iwata et al. with the reasonable expectation of (1) success, as both Iwata et al. and the AAPA teach that such a photosensitive resinous composition can successfully be deposited by slit / die coating, and (2) obtaining the benefits of using the slit coating / rinsing process taught by the AAPA, such as preventing coating liquid from being solidified at the tip of the coating head.

20. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potjer et al. (USPN 5,851,566) in view of Poag et al. (USPN 5,958,517).

21. Potjer et al. teaches all the limitations of Claim 6 as set forth above in paragraph 11, except for a method wherein, when the supply of the coating liquid is stopped, the rinsing liquid (i.e., the cleaning liquid) is supplied to the coating head periodically. Specifically, Potjer et al. is silent as to whether the cleaning liquid is supplied periodically / intermittently or continuously during the time period(s) in which the supply of coating liquid is stopped. However, it is the purpose of the cleaning liquid of Potjer et al. to clean and remove coating liquid from the inside of the applicator die (i.e., the coating head) (Col.8, lines 4 – 6). Poag et al. teaches that, in the art of supplying a cleaning fluid to a coating liquid delivery orifice in order to clean the orifice (i.e., an orifice cleaning process analogous to that taught by Potjer et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to pulse the flow of cleaning fluid by opening and closing the cleaning fluid valve (i.e., to periodically supply the rinsing liquid) to provide cleaning agitation and facilitate the cleaning of surfaces (Col.6, lines 51 – 54). Therefore, it would have been obvious to one of ordinary skill in the art to periodically supply (i.e., pulse) the cleaning liquid of Potjer et al. to the coating head when the supply of coating liquid is stopped with the reasonable expectation of successfully and advantageously improving the efficiency of the cleaning process.

22. Potjer et al. teaches all the limitations of Claim 7 as set forth above in paragraph 11, except for a method wherein the rinsing liquid (i.e., the cleaning liquid) is a solvent of the coating liquid. Specifically, Potjer et al. is silent as to the nature of the cleaning liquid. However, Poag et al. teaches that, in the art of supplying a cleaning

fluid to a coating liquid delivery orifice in order to clean the orifice (i.e., an orifice cleaning process analogous to that taught by Potjer et al.) (Col.4, lines 42 – 60), it was known at the time of the applicant's invention to utilize a solvent of the coating liquid as the cleaning fluid (Col.1, lines 45 – 46, Col.2, lines 2 – 5, and Col.4, lines 50 – 60). It would have been obvious to one of ordinary skill in the art to utilize a solvent of the coating liquid of Potjer et al. as the cleaning liquid in Potjer et al. with the reasonable expectation of (1) success, as Poag et al. teaches that such a process can be successfully performed, and (2) obtaining the benefits of using a solvent of the coating liquid as the cleaning liquid, such as the ability to dissolve any dry or solidified coating material present at the coating head. This benefit is clearly applicable to the coating / cleaning process of Potjer et al. and would have been readily recognized by one of ordinary skill in the art.

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23. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potjer et al. (USPN 5,851,566) in view of the applicant's admitted prior art (AAPA).

24. Potjer et al. teaches all the limitations of Claim 7 as set forth above in paragraph 11, except for a method wherein the rinsing liquid (i.e., the cleaning liquid) is a solvent of the coating liquid. Specifically, Potjer et al. is silent as to the nature of the cleaning liquid. However, the AAPA teaches that it was known in the art at the time of the applicant's invention to utilize a solvent of the coating liquid as the rinsing (i.e., cleaning) liquid in a coating head cleaning process (i.e., a process analogous to that of Potjer et al.'s) (page 4, lines 10 – 11 of the applicant's specification). It

would have been obvious to one of ordinary skill in the art to utilize a solvent of the coating liquid of Potjer et al. as the cleaning liquid in Potjer et al. with the reasonable expectation of (1) success, as the AAPA teaches that such a process can be successfully performed, and (2) obtaining the benefits of using a solvent of the coating liquid as the cleaning liquid, such as the ability to dissolve any dry or solidified coating material present at the coating head. This benefit is clearly applicable to the coating / cleaning process of Potjer et al. and would have been readily recognized by one of ordinary skill in the art

Response to Arguments

25. The applicant's arguments filed on 1/29/2003 have been fully considered but are not persuasive. Specifically, the applicant's arguments are moot in view of the new grounds of rejection presented above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (703) 308-7557. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Wesley D Markham
Examiner
Art Unit 1762

WDM
April 28, 2003

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